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Page 8

Inventor: Tan et al.

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- 1 (1) the anneal procedure comprises (1) a soak step at a temperature
2 between 600 and 800 °C for a time between 10 and 30 seconds and
3 (2) a spike step where the temperature ramps up to a peak
4 temperature between 1000 and 1100 °C and a ramp-down from said
5 peak temperature to a temperature below 800 °C; said ramp up and
6 ramp down have a rate between 200 and 300 degree° C per minute.
7
- 8 18. (ORIGINAL) The method of claim 17 wherein the pocket amorphizing implantation
9 comprises implanting Sb or In species at an Energy between 115-150 keV using a
10 quad implant at a 45 degree angle to form a pocket implant region to a depth between
11 40 and 100 nm.
19. (ORIGINAL) The method of claim 17 wherein said amorphous pocket region is formed at a
depth range between 40 and 100 nm; said amorphous pocket region has a thickness between
10 and 20 nm; the substrate above the amorphous pocket region remains crystalline.
20. (Currently Amended) The method of claim 17 wherein the shallow amorphizing implant
comprises: implanting As, Si, or Ge species at a dose greater than $5 \times 10^{13} \text{cm}^{-2}$ and at an
energy between 5 and 10 keV, and preferably at a 7 degree and a quad twist.
21. (New) The method of claim 1 wherein said amorphous shallow implant region is not a halo
region.
22. (NEW) The method of claim 1 wherein said wherein the shallow amorphizing implant
comprises: implanting As, Si, or Ge species; said first conductivity type is p-type and said
second conductivity type is n-type.
23. (NEW) The method of claim 1 wherein said wherein the shallow amorphizing implant
comprises: implanting Si, or Ge species.

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Page 9

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24. (NEW) The method of claim 17 wherein said wherein the shallow amorphizing implant comprises: implanting Si, Ge or As species.